



SEQUENCE LISTING

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RENO, JOHN

<120> HUMANIZED ANTIBODIES

<130> 014357/027 8772

<140> 09/910,483
<141> 2001-07-19

<160> 96

<170> PatentIn Ver. 2.1

<210> 1
<211> 116

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic VH Domain
peptide of Hum A

<400> 1
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1 5 10 15

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Asn Ile Lys Asp Thr
20 25 30

Tyr Ile His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
35 40 45

Ala Arg Ile Asp Pro Ala Asn Asp Asn Thr Ile Tyr Ala Asp Ser Val
50 55 60

Lys Gly Arg Phe Thr Ile Ser Ser Asp Asp Ser Lys Asn Thr Ala Tyr
65 70 75 80

Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
85 90 95

Thr Asp Ser Gly Tyr Trp Phe Ala Tyr Trp Gly Gln Gly Thr Leu Val
100 105 110

Thr Val Ser Ser
115

<210> 2
<211> 348
<212> DNA
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic VH nucleotide
sequence of Hum A

<400> 2
gaagttcaac ttgttgagtc tgggtggcggt ctgggttcagc cgggtggctc tctgcgcctg 60
tcttgcgcag caagcggttt caacattaag gacacctaca tccattgggt gaggcaagct 120
ccgggttaagg gcttggagtg ggtggcacgt atcgaccgg caaacgacaa caccattac 180

gctgacagcg tgaaggccg ttttactatt tctagcgacg actctaagaa caccgcgtac 240
cttcagatga actctctgcg tgccgaggac accgcccgtct actactgcac ggactctggc 300
tactggtttg cctactgggg ccagggcacg cttgtcaccg tctcttct 348

<210> 3
<211> 108
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic VL Domain
peptide of Hum A

<400> 3
Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
1 5 10 15
Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Ser Ile Ser Asn Asn
20 25 30
Leu His Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile
35 40 45
Tyr His Ala Ser Gln Ser Ile Ser Gly Val Pro Ser Arg Phe Ser Gly
50 55 60
Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro
65 70 75 80
Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Ser Asn Ser Trp Pro Tyr
85 90 95
Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys Arg
100 105

<210> 4
<211> 324
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic VL nucleotide
sequence of Hum A

<400> 4
gatatccaga tgacccaatc tccgtcttagc ctgagcgcca gtgttggta tcgagttacc 60
attacttgcg ggcgcagcca atctatcagt aataatcttc actgttatca aaaaaaaccg 120
ggtaaagctc cggaaacttct tatctatcac gcctctcaga gcattagcg 180
cgcttctctg gctctggctc gggcacggac tttaccctta ccatcagctc tcttcagccg 240
gaagactttg ccaccttata ttgtcagcag tctaatagtc ggccgtatac cttcggtaa 300
ggtaccaagg tcgagattaa gcgc 324

<210> 5
<211> 116
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic VH Domain
peptide of Hum B

<400> 5

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1 5 10 15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Asn Ile Lys Asp Thr
20 25 30
Tyr Ile His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
35 40 45
Ala Arg Ile Asp Pro Ala Asn Asp Asn Thr Ile Tyr Ala Asp Ser Val
50 55 60
Lys Gly Arg Phe Thr Ile Ser Ser Asp Asp Ser Lys Asn Thr Ala Tyr
65 70 75 80
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
85 90 95
Thr Ala Ser Gly Tyr Trp Phe Ala Tyr Trp Gly Gln Gly Thr Leu Val
100 105 110
Thr Val Ser Ser
115

<210> 6
<211> 348
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic VH nucleotide sequence of Hum B

<400> 6
gaagtcaac ttgtttagtc tggtggcggt ctggttcagc cgggtggctc tctgcgcctg 60
tcttgcgcag caagcggtt caacattaag gacacctaca tccattgggt gaggcaagct 120
ccgggttaagg gtcgtggagtg ggtggcacgt atcgacccgg caaacgacaa caccatttac 180
gtctgacagcg tgaaggggccg ttttactatt tctagcgacg actctaagaa caccgcgtac 240
cttcagatga actctctgcg tgccgaggac accgcccgtct actactgcac ggcctctggc 300
tactgggttg cctactgggg ccagggcacg cttgtcacccg tctttct 348

<210> 7
<211> 108
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic VL Domain peptide of Hum B

<400> 7
Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
1 5 10 15

Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Ser Ile Ser Asn Asn
20 25 30

Leu His Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile
35 40 45

Tyr His Ala Ser Gln Ser Ile Ser Gly Val Pro Ser Arg Phe Ser Gly
50 55 60

Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro
65 70 75 80

Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Ser Asn Ser Trp Pro Tyr
85 90 95

Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys Arg
100 105

<210> 8

<211> 324

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic VL nucleotide sequence of Hum B

<400> 8

gatatccaga tgacccaatc tccgtcttagc ctgagcgcca gtgttggta tcgagttacc 60
attacttgcc gcgcgcagcca atctatcagt aataatcttc actggtatca acaaaaaccg 120
ggtaaagctc cggaaacttct tatctatcac gcctctcaga gcattagcgg cggtccgagc 180
cgcttctctg gctctggctc gggcacggac ttaccctta ccatcagctc tcttcagccg 240
gaagactttg ccacctatta ttgtcagcag tctaataagct ggccgtatac cttcggtaaa 300
ggtaccaagg tcgagattaa gcgc 324

<210> 9

<211> 116

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic VH Domain peptide of Hum C

<400> 9

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1 5 10 15

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Asn Ile Lys Asp Thr
20 25 30

Tyr Ile His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
35 40 45

Ala Arg Ile Asp Pro Ala Asn Asp Asn Thr Ile Tyr Ala Asp Ser Val
50 55 60

Lys Gly Arg Phe Thr Ile Ser Gly Asp Asp Ser Lys Asn Thr Ala Tyr
65 70 75 80

Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
85 90 95

Thr Thr Ser Gly Tyr Trp Phe Ala Tyr Trp Gly Gln Gly Thr Leu Val
100 105 110

Thr Val Ser Ser
115

<210> 10

<211> 348

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic VH nucleotide sequence of Hum C

<400> 10

gaagttcaac ttgttgagtc tgggtggcgtt ctggttcagc cgggtggctc tctgcgcctg 60
tcttgcgcag caagcgggtt caacattaag gacacctaca tccattgggt gaggcaagct 120
ccgggttaagg gtctggagtg ggtggcacgt atcgaccggc caaacgacaa caccattiac 180
gctgacagcg tgaagggccg ttttactatt tctggcgacg actctaagaa caccgcgtac 240
cttcagatga actctctgcg tgccgaggac accgcccgtct actactgcac gacctctggc 300
tactgggtttg cctactgggg ccagggcacg cttgtcacccg tctcttct 348

<210> 11

<211> 108

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic VL Domain peptide of Hum C

<400> 11

Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
1 5 10 15

Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Ser Ile Ser Asn Asn
20 25 30

Leu His Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile
35 40 45

Tyr His Ala Ser Gln Ser Ile Ser Gly Val Pro Ser Arg Phe Ser Gly
50 55 60

Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro
65 70 75 80

Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Ser Asn Ser Trp Pro Tyr
85 90 95

Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys Arg
100 105

<210> 12

<211> 324

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic VL nucleotide sequence of Hum C

<400> 12

gatatccaga tgacccaatc tccgtctagc ctgagcgcac gtgttggta tcgagttacc 60
attactgcc gcgcgcagccatc atctatcagt aataatctc actggtatca aaaaaaaccg 120
ggtaaagctc cggaaacttct tatctatcac gcctctcaga gcatttagcgg cggtccgagc 180
cgtttcctcg gctctggctc gggcacggac tttaccctta ccatcagctc tcttcagccg 240
gaagacttttgcacctatattttgtcagcag tctaatacgatc ggccgtatac cttcggtcaa 300
ggtagccagg tcgagattaa gcgc 324

<210> 13
<211> 116
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic VH Domain peptide of Hum D

<400> 13
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1 5 10 15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Asn Ile Lys Asp Thr
20 25 30
Tyr Ile His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
35 40 45
Ala Arg Ile Asp Pro Ala Asn Asp Asn Thr Ile Tyr Ala Asp Ser Val
50 55 60
Lys Gly Arg Phe Thr Ile Ser Ser Asp Asp Ser Lys Asn Thr Ala Tyr
65 70 75 80
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
85 90 95
Thr Thr Ser Gly Tyr Trp Phe Ala Tyr Trp Gly Gln Gly Thr Leu Val
100 105 110
Thr Val Ser Ser
115

<210> 14
<211> 348
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic VH nucleotide sequence of Hum D

<400> 14
gaagttcaac ttgttgagtc tggggcggt ctggttcagc cgggtggctc tctgcgcctg 60
tcttcgcgcag caagcggttt caacattaag gacacctaca tccattgggt gaggcaagct 120
ccgggttaagg gtcggagtg ggtggcacgt atcgacccgg caaacgacaa caccatttac 180
gctgacagcg tgaaggccg ttactatt tctagcgacg actctaagaa caccgcgtac 240
cttcagatga actctctgcg tgccgaggac accggccgtct actactgcac gacctctggc 300
tactggtttg cctactgggg ccagggcacg cttgtcaccc tctttct 348

<210> 15
<211> 108
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic VL Domain peptide of Hum D

<400> 15
Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly

1 5 10 15
Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Ser Ile Ser Asn Asn
20 25 30
Leu His Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile
35 40 45
Tyr His Ala Ser Gln Ser Ile Ser Gly Val Pro Ser Arg Phe Ser Gly
50 55 60
Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro
65 70 75 80
Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Ser Asn Ser Trp Pro Tyr
85 90 95
Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys Arg
100 105

<210> 16
<211> 324
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic VL nucleotide sequence of Hum D

<400> 16
gatatccaga tgacccaatc tccgtcttagc ctgagcgcca gtgtggta tcgagttacc 60
attacttgcc ggcgcaggcca atctatcagt aataatcttc actgttatca aaaaaaaccg 120
ggtaaagctc cggaaacttct tatctatcac gcctctcaga gcattagcgg cggtccgagc 180
cgcttctctg gctctggctc gggcacggac tttaccctta ccatcagctc tcttcagccg 240
gaagactttg ccacctatta ttgtcagcag tctaatacg 300
ggtaccaagg tcgagattaa gcgc 324

<210> 17
<211> 116
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic VH Domain peptide of Hum E

<400> 17
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1 5 10 15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Asn Ile Lys Asp Thr
20 25 30
Tyr Ile His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
35 40 45
Ala Arg Ile Asp Pro Ala Asn Asp Asn Thr Ile Tyr Asp Pro Lys Val
50 55 60
Gln Gly Arg Phe Thr Ile Ser Ala Asp Asp Ser Lys Asn Thr Ala Tyr
65 70 75 80
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys

85

90

95

Thr Thr Ser Gly Tyr Trp Phe Ala Tyr Trp Gly Gln Gly Thr Leu Val
100 105 110

Thr Val Ser Ser
115

<210> 18

<211> 348

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic VH nucleotide sequence of Hum E

<400> 18

gaagtcaac ttgttgagtc tggggcggt ctggttcagc cgggtggctc tctgcgcctg 60
tcttgcgcag caagcggtt caacattaag gacacctaca tccattgggt gaggcaagct 120
ccgggttaagg gtctggagtg ggtggcacgt atcgacccgg caaaccgacaa caccattac 180
gatccgaagg tgccaggccg ttttactatt tctgcggacg actctaagaa caccgcgtac 240
cttcagatga actctctgcg tgccgaggac accgcccgtct actactgcac gacctctggc 300
tactggtttgc cctactgggg ccagggcacg cttgtcacccg tctttct 348

<210> 19

<211> 108

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic VL Domain peptide of Hum E

<400> 19

Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
1 5 10 15

Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Ser Ile Ser Asn Asn
20 25 30

Leu His Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile
35 40 45

Tyr His Ala Ser Gln Ser Ile Ser Gly Val Pro Ser Arg Phe Ser Gly
50 55 60

Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro
65 70 75 80

Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Ser Asn Ser Trp Pro Tyr
85 90 95

Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys Arg
100 105

<210> 20

<211> 324

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic VL nucleotide sequence of Hum E

<400> 20

gatatccaga tgacccaatc tccgtctagc ctgagcgcca gtgtggta tcgagttacc 60
attactgcc gcgccagcca atctatcagt aataatctc actggtatca aaaaaaaccg 120
ggtaaagctc cgaacttct tatctatcac gcctctcaga gcattagcgg cggtccgagc 180
cgcttcctcg gctctggctc gggcacggac tttaccctta ccatcagctc tcttcagccg 240
gaagacttg ccacctatta ttgtcagcag tctaatacg 300
ggtaccaagg tcgagattaa gcgc 324

<210> 21

<211> 116

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic VH Domain peptide of Hum F

<400> 21

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1 5 10 15

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Asn Ile Lys Asp Thr
20 25 30

Tyr Ile His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
35 40 45

Ala Arg Ile Asp Pro Ala Asn Asp Asn Thr Ile Tyr Ala Asp Ser Val
50 55 60

Lys Gly Arg Phe Thr Ile Ser Ala Asp Asp Ser Lys Asn Thr Ala Tyr
65 70 75 80

Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
85 90 95

Thr Thr Ser Gly Tyr Trp Phe Ala Tyr Trp Gly Gln Gly Thr Leu Val
100 105 110

Thr Val Ser Ser
115

<210> 22

<211> 348

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic VH nucleotide sequence of Hum F

<400> 22

gaagttcaac ttgttgagtc ttgtggcggt ctgggtcagc cgggtggctc tctgcgcctg 60
tcttgcgcag caagcggtt caacattaag gacacctaca tccattgggt gaggcaagct 120
ccgggttaagg gtctggagtg ggtggcacgt atcgaccgg caaacgacaa caccattac 180
gctgacagcg tgaaggggccg ttttactatt tctgcggacg actctaagaa caccgcgtac 240
cttcagatga actctctgcg tgccgaggac accggcgctc actactgcac gacctctggc 300
tactggtttgc cttactgggg ccaggcgcacg tctgtcaccg tctcttct 348

<210> 23
<211> 108
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic VL Domain peptide of Hum F

<400> 23
Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
1 5 10 15
Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Ser Ile Ser Asn Asn
20 25 30
Leu His Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile
35 40 45
Tyr His Ala Ser Gln Ser Ile Ser Gly Val Pro Ser Arg Phe Ser Gly
50 55 60
Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro
65 70 75 80
Glu Asp Phe Ala Thr Tyr Cys Gln Gln Ser Asn Ser Trp Pro Tyr
85 90 95
Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys Arg
100 105

<210> 24
<211> 324
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic VL nucleotide sequence of Hum F

<400> 24
gatatccaga tgacccaatc tccgtctagc ctgagcgcca gtgttgtga tcgagttacc 60
attacttgcc ggcgcagcca atctatcagt aataatctc actggtatca acaaaaaaccg 120
ggtaaagctc cggaaacttct tatctatcac gcctctcaga gcattagcgg cgttccgagc 180
cgttctctg gctctggctc gggcacggac tttaccctta ccatcagctc tcttcagccg 240
gaagactttg ccaccttata ttgtcagcag tctaatacg 300
ggtaccaagg tcgagattaa gcgc 324

<210> 25
<211> 116
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic VH Domain peptide of Hum G

<400> 25
Glu Val Gln Leu Val Glu Ser Gly Gly Leu Val Gln Pro Gly Gly
1 5 10 15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Asn Ile Lys Asp Thr
20 25 30

Tyr Ile His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
35 40 45
Ala Arg Ile Asp Pro Ala Asn Asp Asn Thr Ile Tyr Ala Asp Ser Val
50 55 60
Lys Gly Arg Phe Thr Ile Ser Ala Asp Asp Ser Lys Asn Thr Ala Tyr
65 70 75 80
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
85 90 95
Thr Thr Ser Gly Tyr Trp Phe Ala Tyr Trp Gly Gln Gly Thr Leu Val
100 105 110
Thr Val Ser Ser
115

<210> 26
<211> 348
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic VH nucleotide sequence of Hum G

<400> 26
gaagttcaac ttgttgagtc tgggtggcggt ctgggttcagc cgggtggctc tctgcgcctg 60
tcttgcgcag caagcggttt caacattaaag gacacctaca tccattgggt gaggcaagct 120
ccgggtaagg gtcggagtg ggtggcacgt atcgacccgg caaacgacaa caccatttac 180
gctgacagcg tgaaggccg ttttactatt tctgcggacg actctaagaa caccgcgtac 240
cttcagatga actctctgcg tgccgaggac accgcccgtct actactgcac gacctctggc 300
tactggtttg cctactgggg ccagggcacg cttgtcacccg tctttct 348

<210> 27
<211> 108
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic VL Domain peptide of Hum G

<400> 27
Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
1 5 10 15
Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Ser Ile Ser Asn Asn
20 25 30
Leu His Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile
35 40 45
Lys His Ala Ser Gln Ser Ile Ser Gly Val Pro Ser Arg Phe Ser Gly
50 55 60
Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro
65 70 75 80
Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Ser Asn Ser Trp Pro Tyr
85 90 95

Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys Arg
100 105

<210> 28

<211> 324

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic VL nucleotide sequence of Hum G

<400> 28

gatatccaga tgacccaatc tccgtctagc ctgagcgcca gtgttgtga tcgagttacc 60
attacttgcg gccccagcca atctatcagt aataatcttc actgttatca aaaaaaaccg 120
ggtaaagctc cggaaacttct tatcaaacac gcctctcaga gcattagcgg cggtccgagc 180
cgttctctg gctctggctc gggcacggac ttaccctta ccatcagctc tcttcagccg 240
gaagactttg ccacctatta ttgtcagcag tctaatacg 300
ggtaccaagg tcgagattaa gcgc 324

<210> 29

<211> 116

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic VH Domain peptide of Hum H

<400> 29

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1 5 10 15

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Asn Ile Lys Asp Thr
20 25 30

Tyr Ile His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
35 40 45

Ala Arg Ile Asp Pro Ala Asn Asp Asn Thr Ile Tyr Asp Pro Lys Val
50 55 60

Gln Gly Arg Phe Thr Ile Ser Ala Asp Asp Ser Lys Asn Thr Ala Tyr
65 70 75 80

Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
85 90 95

Thr Thr Ser Gly Tyr Trp Phe Ala Tyr Trp Gly Gln Gly Thr Leu Val
100 105 110

Thr Val Ser Ser
115

<210> 30

<211> 348

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic VH nucleotide

sequence of Hum H

<400> 30
gaagttcaac ttgttgagtc tgggtggcggt ctgggttcagc cgggtggctc tctgcgcctg 60
tcttgcgcag caagcggtt caacattaag gacacctaca tccattgggt gaggcaagct 120
ccgggttaagg gtcgtggagtg ggtggcacgt atcgaccgg caaacgacaa caccattac 180
gatccgaagg tgccaggccg ttttactatt tctgcggacg actctaagaa caccgcgtac 240
cttcagatga actctctgcg tgccgaggac accgcccgtct actactgcac gacctctggc 300
tactggtttgc cctactgggg ccagggcacg cttgtcaccg tctttct 348

<210> 31
<211> 108
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic VL Domain
peptide of Hum H

<400> 31
Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
1 5 10 15
Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Ser Ile Ser Asn Asn
20 25 30
Leu His Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile
35 40 45
Lys His Ala Ser Gln Ser Ile Ser Gly Val Pro Ser Arg Phe Ser Gly
50 55 60
Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro
65 70 75 80
Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Ser Asn Ser Trp Pro Tyr
85 90 95
Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys Arg
100 105

<210> 32
<211> 324
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic VL nucleotide
sequence of Hum H

<400> 32
gatatccaga tgacccaatc tccgtctagc ctgagcgcca gtgtggtga tcgagttacc 60
attactgccc ggcgcagcca atctatcagt aataatcttc actgttatca acaaaaacgg 120
ggtaaagctc cggaaacttct tatcaaacac gcctctcaga gcattagcgg cggtccggac 180
cgcttcctcg gctctggctc gggcacggac ttaccctta ccatcagctc tcttcagccg 240
aaagactttg ccacctatta ttgtcagcag tctaatacgct ggccgtatac ctccggtaa 300
ggtagccaaagg tcgagattaa gcgc 324

<210> 33
<211> 116
<212> PRT
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic VH Domain peptide of Hum I

<400> 33

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1 5 10 15

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Asn Ile Lys Asp Thr
20 25 30

Tyr Ile His Trp Met Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
35 40 45

Ala Arg Ile Asp Pro Ala Asn Asp Asn Thr Ile Tyr Asp Pro Lys Val
50 55 60

Gln Gly Arg Phe Thr Met Ser Ala Asp Thr Ser Lys Asn Thr Ala Tyr
65 70 75 80

Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
85 90 95

Thr Thr Ser Gly Tyr Trp Phe Ala Tyr Trp Gly Gln Gly Thr Leu Val
100 105 110

Thr Val Ser Ser
115

<210> 34

<211> 348

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic VH nucleotide sequence of Hum I

<400> 34

gaagttcaac ttgttgagtc tgggtggcggt ctgggttcagc cgggtggctc tctgcgcctg 60
tcttgcgcag caagcggtt caacattaag gacacctaca tccattggat gaggcaagct 120
ccgggttaagg gtcgtggagtg ggtggcacgt atcgacccgg caaacgacaa caccatttac 180
gatccgaagg tgcagggccg ttttactatg tctgcggacg actctaagaa caccgcgtac 240
cttcagatga actctctgcg tgccgaggac accgcccgtct actactgcac gacctctggc 300
tactggtttg cctactgggg ccagggcacg cttgtcaccg tctcttct 348

<210> 35

<211> 108

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic VL Domain peptide of Hum I

<400> 35

Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
1 5 10 15

Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Ser Ile Ser Asn Asn
20 25 30

Leu His Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile
35 40 45
Lys His Ala Ser Gln Ser Ile Ser Gly Val Pro Ser Arg Phe Ser Gly
50 55 60
Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro
65 70 75 80
Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Ser Asn Ser Trp Pro Tyr
85 90 95
Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys Arg
100 105

<210> 36
<211> 324
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic VL nucleotide sequence of Hum I

<400> 36
gatatccaga tgacccaatc tccgtctagc ctgagcgcca gtgttggta tcgagttacc 60
attactgcc gcgcaggcca atctatcagt aataatcttc actgttatca acaaaaaccg 120
ggtaaagctc cggaaacttct tatcaaacac gcctctcaga gcattagcgg cggtccgagc 180
cgttctctg gctctggctc gggcacggac tttaccctta ccatcagctc tcttcagccg 240
gaagactttt ccaccttatta ttgtcagcag tctaatacgct ggccgtatac cttcggtcaa 300
ggtaccaagg tcgagattaa gcgc 324

<210> 37
<211> 116
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Murine 1A6 VH Domain

<400> 37
Glu Val Gln Leu Gln Gln Ser Gly Ala Glu Leu Val Lys Pro Gly Ala
1 5 10 15
Ser Val Lys Leu Ser Cys Thr Ala Ser Gly Phe Asn Ile Lys Asp Thr
20 25 30
Tyr Ile His Trp Met Lys Gln Arg Pro Glu Gln Gly Leu Glu Trp Ile
35 40 45
Gly Arg Ile Asp Pro Ala Asn Asp Asn Thr Ile Tyr Asp Pro Lys Val
50 55 60
Gln Gly Lys Ala Thr Met Thr Ala Asp Thr Ser Ser Asn Thr Ala Tyr
65 70 75 80
Leu Gln Leu Ser Ser Leu Thr Ser Glu Asp Thr Ala Val Tyr Tyr Cys
85 90 95
Thr Thr Ser Gly Tyr Trp Phe Ala Tyr Trp Gly Gln Gly Thr Leu Val
100 105 110

Thr Val Ser Ala
115

<210> 38
<211> 108
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Murine 1A6 VL Domain

<400> 38
Asp Ile Val Leu Thr Gln Ser Pro Ala Thr Leu Ser Val Thr Pro Gly
1 5 10 15
Asp Ser Val Ser Leu Ser Cys Arg Ala Ser Gln Ser Ile Ser Asn Asn
20 25 30
Leu His Trp Tyr Gln Gln Lys Ser His Glu Ser Pro Arg Leu Leu Ile
35 40 45
Lys His Ala Ser Gln Ser Ile Ser Gly Ile Pro Ser Arg Phe Ser Gly
50 55 60
Ser Gly Ser Gly Thr Asp Phe Thr Leu Ser Ile Asn Ser Val Glu Thr
65 70 75 80
Glu Asp Phe Gly Met Phe Phe Cys Gln Gln Ser Asn Ser Trp Pro Tyr
85 90 95
Thr Phe Gly Gly Thr Lys Leu Glu Ile Lys Arg
100 105

<210> 39
<211> 93
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Human VH Domain
consensus sequence of Heavy Chain Subgroup III (Humiii)

<400> 39
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1 5 10 15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Asn Phe Ser Trp Val
20 25 30
Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Ala Asp Ser Val
35 40 45
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
50 55 60
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
65 70 75 80
Thr Arg Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
85 90

<210> 40
<211> 81
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Human VL Domain
consensus sequence of Light Chain K Subgroup I (HumKI)

<400> 40
Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
1 5 10 15
Asp Arg Val Thr Ile Thr Cys Trp Tyr Gln Gln Lys Pro Gly Lys Ala
20 25 30
Pro Lys Leu Leu Ile Tyr Gly Val Pro Ser Arg Phe Ser Gly Ser Gly
35 40 45
Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro Glu Asp
50 55 60
Phe Ala Thr Tyr Tyr Cys Phe Gly Gln Gly Thr Lys Val Glu Ile Lys
65 70 75 80

Arg

<210> 41
<211> 116
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Murine 1A6 VH Domain

<400> 41
Glu Val Gln Leu Gln Gln Ser Gly Ala Glu Leu Val Lys Pro Gly Ala
1 5 10 15
Ser Val Lys Leu Ser Cys Thr Ala Ser Gly Phe Asn Ile Lys Asp Thr
20 25 30
Tyr Ile His Trp Met Lys Gln Arg Pro Glu Gln Gly Leu Glu Trp Ile
35 40 45
Gly Arg Ile Asp Pro Ala Asn Asp Asn Thr Ile Tyr Asp Pro Lys Val
50 55 60
Gln Gly Lys Ala Thr Met Thr Ala Asp Thr Ser Ser Asn Thr Ala Tyr
65 70 75 80
Leu Gln Leu Ser Ser Leu Thr Ser Glu Asp Thr Ala Val Tyr Tyr Cys
85 90 95
Thr Thr Ser Gly Tyr Trp Phe Ala Tyr Trp Gly Gln Gly Thr Leu Val
100 105 110
Thr Val Ser Ala
115

<210> 42

<211> 108
<212> PRT
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Murine 1A6 VL Domain

<400> 42

Asp Ile Val Leu Thr Gln Ser Pro Ala Thr Leu Ser Val Thr Pro Gly
1 5 10 15

Asp Ser Val Ser Leu Ser Cys Arg Ala Ser Gln Ser Ile Ser Asn Asn
20 25 30

Leu His Trp Tyr Gln Gln Lys Ser His Glu Ser Pro Arg Leu Leu Ile
35 40 45

Lys His Ala Ser Gln Ser Ile Ser Gly Ile Pro Ser Arg Phe Ser Gly
50 55 60

Ser Gly Ser Gly Thr Asp Phe Thr Leu Ser Ile Asn Ser Val Glu Thr
65 70 75 80

Glu Asp Phe Gly Met Phe Phe Cys Gln Gln Ser Asn Ser Trp Pro Tyr
85 90 95

Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys Arg
100 105

<210> 43

<211> 116

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Humanized 1A6
(HumB) VH Domain consensus sequence of Heavy Chain
Subgroup III (Humiii)

<400> 43

Glu Val Gln Leu Val Glu Ser Gly Gly Leu Val Gln Pro Gly Gly
1 5 10 15

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Asn Ile Lys Asp Thr
20 25 30

Tyr Ile His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
35 40 45

Ala Arg Ile Asp Pro Ala Asn Asp Asn Thr Ile Tyr Ala Asp Ser Val
50 55 60

Lys Gly Arg Phe Thr Ile Ser Ser Asp Asp Ser Lys Asn Thr Ala Tyr
65 70 75 80

Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
85 90 95

Thr Ala Ser Gly Tyr Trp Phe Ala Tyr Trp Gly Gln Gly Thr Leu Val
100 105 110

Thr Val Ser Ser
115

<210> 44
<211> 108
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Humanized 1A6
(HumB) VL Domain consensus sequence of Light Chain K
Subgroup I (HumKI)

<400> 44
Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
1 5 10 15
Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Ser Ile Ser Asn Asn
20 25 30
Leu His Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile
35 40 45
Tyr His Ala Ser Gln Ser Ile Ser Gly Val Pro Ser Arg Phe Ser Gly
50 55 60
Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro
65 70 75 80
Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Ser Asn Ser Trp Pro Tyr
85 90 95
Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys Arg
100 105

<210> 45
<211> 93
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Human VH Domain
consensus sequence of Heavy Chain Subgroup III (Humiii)

<400> 45
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1 5 10 15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Asn Phe Ser Trp Val
20 25 30
Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Ala Asp Ser Val
35 40 45
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
50 55 60
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
65 70 75 80
Thr Arg Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
85 90

<210> 46
<211> 81

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Human VL Domain
consensus sequence of Light Chain K Subgroup I (HumKI)

<400> 46

Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
1 5 10 15

Asp Arg Val Thr Ile Thr Cys Trp Tyr Gln Gln Lys Pro Gly Lys Ala
20 25 30

Pro Lys Leu Leu Ile Tyr Gly Val Pro Ser Arg Phe Ser Gly Ser Gly
35 40 45

Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro Glu Asp
50 55 60

Phe Ala Thr Tyr Tyr Cys Phe Gly Gln Gly Thr Lys Val Glu Ile Lys
65 70 75 80

Arg

<210> 47

<211> 753

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic nucleotide
sequence of Humanized scFv3 (HumI)

<400> 47

cgaaccatgg gcgatatacca gatgacccaa tctccgtctca gcctgagcgc cagtgttgg 60
gatcgagttt ccattacttg ccgcgccagc caatctatca gtaataatct tcactggat 120
caacaaaaac cggtaaaagc tccgaaactt cttatcaaac acgcctctca gagcattagc 180
ggcggtccga gccgcttctc tggctctggc tcgggcacgg acitttaccct taccatcagc 240
tctcttcagc cggaaagactt tgccacctat tattgtcagc agtctaatacg ctggccgtat 300
acttccggtc aaggtaacaa ggtcgagatt aagcgcggcg gtggcggtt tcggtggcggt 360
ggtagcggtt gccgtggatc cggtggcggt ggcagcgaag ttcaacttgt tgagtctgg 420
ggcggtctgg tttagccggg tggctctctg cgcctgtctt ggcagcaag cggtttcaac 480
atataaggaca cctacatcca ttggatgagg caagctccgg gtaagggtct ggagtgggtg 540
gcacgtatcg acccggcaaa cgacaacacc atttacgatc cgaagggtca gggccgttt 600
actatgtctg cggacacacctc taagaacacc gcgtaccttc agatgaactc tctgcgtgcc 660
gaggacaccg ccgtctacta ctgcacgacc tctggctact ggttgccta ctggggccag 720
ggcacgcttg tcaccgtctc ttctggtaa ccc 753

<210> 48

<211> 61

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic oligonucleotide
AVL-1

<400> 48

cgaaccatgg gcgatatacca gatgacccaa tctccgtctca gcctgagcgc cagtgttgg 60
g 61

<210> 49
<211> 72
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide
AVL-2

<400> 49
gtgaagatta ttactgatag attggctggc gcggcaagta atggtaactc gatcaccaac 60
actggcgctc ag 72

<210> 50
<211> 71
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide
AVL-3

<400> 50
ctatcagtaa taatcttcac tggtatcaac aaaaaccggg taaagctccg aaacttctta 60
tctatcacgc c 71

<210> 51
<211> 68
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide
AVL-4

<400> 51
cccgagccag agccagagaa gcggctcggc acgcccctaa tgctctgaga ggcgtgatag 60
ataagaag 68

<210> 52
<211> 70
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide
AVL-5

<400> 52
ctctggctct ggctcgggca cggactttac ccttaccatc agctctttc agccggaaga 60
cttgcacc 70

<210> 53
<211> 66
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide
AVL-6

<400> 53
ccttgaccga aggtatacgg ccagctatta gactgctgac aataataggt ggcaaagtct 60
tccggc 66

<210> 54
<211> 71
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide
AVL-7

<400> 54
gtatacccttc ggtcaaggta ccaaggtcga gattaagcgc ggcggtggcg gttctggtgg 60
cggtggttagc g 71

<210> 55
<211> 32
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide
AVL-8

<400> 55
cgaaccatgg gcgatatatcca gatgacccaa tc 32

<210> 56
<211> 33
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide
AVL-9

<400> 56
cggatccacc gccaccgcta ccaccgcccac cag 33

<210> 57
<211> 73
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide
AVH-1

<400> 57
ggtgtggcgtg gatccgggtgg cggtggcagc gaagttcaac ttgttgagtc tgggtggcggt 60
ctgggttcagc cgg 73

<210> 58
<211> 71
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide
AVH-2

<400> 58
gtccttaatg ttgaaaccgc ttgctgcga agacaggcgc agagagccac ccggctgaac 60
cagaccgcca c 71

<210> 59
<211> 67
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide
AVH-3

<400> 59
ggttcaaca ttaaggacac ctacatccat tgggtgaggc aagctccggg taagggtctg 60
gagtggg 67

<210> 60
<211> 76
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide
AVH-4

<400> 60
ggcccttcac gctgtcagcg taaatggtgt tgcgtttgc cgggtcgata cgtgccaccc 60
actccagacc ctacc 76

<210> 61
<211> 81
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide
AVH-5

<400> 61
cgctgacagc gtgaaggggcc gtttactat ttctagcgac gactctaaga acaccgcgt 60
ccttcagatg aactctctgc 9 81

<210> 62
<211> 67
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide
AVH-6

<400> 62
ccagtagcca gagtccgtgc agtagtagac ggcgggttcc tcggcacgca gagagttcat 60
ctgaagg 67

<210> 63
<211> 65
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide
AVH-7

<400> 63
ggactctggc tactggtttgcctactggggccagggcacgcttgcacccgtctcttctgg 60
ttaac 65

<210> 64
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide
AVH-8

<400> 64
ggtggcggtg gatccgg 18

<210> 65
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide
AVH-9

<400> 65
gggttaacca gaagagacgg 20

<210> 66
<211> 67
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide
BVH-6

<400> 66
ccagtagcca gaggccgtgc agtagtagac ggcggtgtcc tcggcacgca gagagttcat 60
ctgaagg 67

<210> 67
<211> 65
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide
BVH-7

<400> 67
ggcctctggc tactggtttgcctactggggccagggcacgcttgcacccgtctcttctgg 60

<210> 68
<211> 81
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide
CVH-5

<400> 68
cgctgacagc gtgaagggcc gtttactat ttctggcgcac gactctaaga acaccgcgtta 60
ccttcagatg aactctctgc g 81

<210> 69
<211> 67
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide
CVH-6

<400> 69
ccagtagcca gaggtcgtgc agtagtagac ggcgggttcc tcggcacgca gagagttcat 60
ctgaagg 67

<210> 70
<211> 65
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide
CVH-7

<400> 70
gacctctggc tactggtttgc cctactgggg ccagggcacg cttgtcaccg tctcttctgg 60
ttaac 65

<210> 71
<211> 67
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide
DVH-6

<400> 71
ccagtagcca gaggtcgtgc agtagtagac ggcgggttcc tcggcacgca gagagttcat 60
ctgaagg 67

<210> 72
<211> 65
<212> DNA
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic oligonucleotide
DVH-7

<400> 72
gacctctggc tactggtttgcctactggggccagggcacgcttgcacccgtcttctgg 60
ttaac 65

<210> 73
<211> 76
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide
EVH-4

<400> 73
ggccctgcacctcggatcgtaaatgggtgttgtcggtgcgggtcgatacgtgccaccc 60
actccagacccttacc 76

<210> 74
<211> 81
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide
EVH-5

<400> 74
cgatccgaaggtgcaggggccgtttactatttctgcggacgactctaagaacaccgcgt 60
ccttcagatgaaactctctgcg 81

<210> 75
<211> 67
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide
EVH-6

<400> 75
ccagtagcca gaggtcgtgc agtagtagacggcgggtcc tcggcacgca gagagttcat 60
ctgaagg 67

<210> 76
<211> 65
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide
EVH-7

<400> 76
gacctctggc tactggtttgcctactggggccagggcacgcttgcacccgtcttctgg 60
ttaac 65

<210> 77

<211> 67

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic oligonucleotide
FVH-6

<400> 77

ccagtagcca gaggtcgtgc agtagtagac ggccgtgtcc tcggcacgca gagagttcat 60
ctgaagg 67

<210> 78

<211> 65

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic oligonucleotide
FVH-7

<400> 78

gacctctggc tactggtttg cctactgggg ccagggcacg cttgtcaccg tctcttctgg 60
ttaac 65

<210> 79

<211> 71

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic oligonucleotide
GVL-3

<400> 79

ctatcaatcataatcttacat tggtatcaac aaaaaccggg taaagctccg aaacttctta 60
tcaaacacgc c 71

<210> 80

<211> 68

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic oligonucleotide
GVL-4

<400> 80

cccgagccag agccagagaa gcggctcgg aacgccgctaa tgctctgaga ggcgtgaaag 60
ataagaag 68

<210> 81

<211> 81

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic oligonucleotide
GVH-5

<400> 81

cgctgacagc gtgaagggcc gtttactat ttctgcggac gactctaaga acaccgcgt 60
ccttcagatg aactctctgc g 81

<210> 82
<211> 67
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide
GVH-6

<400> 82
ccagtagcca gaggtcgtgc agtagtagac ggcgggttcc tcggcacgca gagagttcat 60
ctgaagg 67

<210> 83
<211> 65
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide
GVH-7

<400> 83
gacctctggc tactggtttgc cctactgggg ccagggcacg cttgtcaccg tctcttctgg 60
ttaac 65

<210> 84
<211> 71
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide
HVL-3

<400> 84
ctatcagtaa taatcttcac tggtatcaac aaaaaccggg taaagctccg aaacttctta 60
tcaaacacgc c 71

<210> 85
<211> 68
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide
HVL-4

<400> 85
cccgagccag agccagagaa gcggctcgga acgccgctaa tgctctgaga ggcgtgaaag 60
ataagaag 68

<210> 86
<211> 76
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic oligonucleotide
HVH-4

<400> 86
ggccctgcac ctcggatcg taaatggtgt tgtcgttgc cgggtcgata cgtgccaccc 60
actccagacc cttaacc 76

<210> 87
<211> 81
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic oligonucleotide
HVH-5

<400> 87
cgatccgaag gtgcagggcc gtttactat ttctgcggac gactctaaga acaccgcgt 60
ccttcagatg aactctctgc g 81

<210> 88
<211> 67
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic oligonucleotide
HVH-6

<400> 88
ccagtagcca gaggtcgtgc agtagtagac ggcgggttcc tcggcacgca gagagttcat 60
ctgaagg 67

<210> 89
<211> 65
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic oligonucleotide
HVH-7

<400> 89
gacctctggc tactggtttgc cctactgggg ccagggcacg cttgtcaccg tctcttctgg 60
ttaac 65

<210> 90
<211> 71
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic oligonucleotide
IVL-3

<400> 90
ctatcagtaa taatcttcac tggtatcaac aaaaaccggg taaagctccg aaacttctta 60
tcaaacacgc c 71

<210> 91
<211> 68
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide
IVL-4

<400> 91
cccgagccag agccagagaa gcggctcgga acgcccctaa tgctctgaga ggcgtgaaag 60
ataagaag 68

<210> 92
<211> 76
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide
IVH-4

<400> 92
ggccctgcac ctccggatcg taaatggtgt tgcgtttgc cgggtcgata cgtgccaccc 60
actccagacc cttacc 76

<210> 93
<211> 81
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide
IVH-5

<400> 93
cgatccgaag gtgcagggcc gtttactat gtctgcggac acctctaaga acaccgcgt 60
cttcagatg aactctctgc g 81

<210> 94
<211> 67
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide
IVH-6

<400> 94
ccatggcca gaggtcgtgc agtagtagac ggcgggtgtcc tcggcacgca gagagttcat 60
ctgaagg 67

<210> 95
<211> 65
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide
IVH-7

<400> 95
gacctctggc tactggtttgcctactggggccagggcacgcttgtcaccgtctcttctgg 60
ttaac 65

<210> 96
<211> 20
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial sequence: Synthetic Linker

<400> 96
Gly Gly Gly Gly Ser Gly Gly Gly Ser Gly Gly Gly Ser Gly
1 5 10 15
Gly Gly Gly Ser
20